REMARKS/ARGUMENTS

The Applicants originally submitted Claims 1-20 in the application. In a previous response, the Applicants amended Claims 1, 7-8, and 14-15 and added Claims 21-22. In the present response, the Applicants have not amended, canceled, or added any claims. Accordingly, Claims 1-22 are currently pending in the application.

I. Rejection of Claims 1-20 under 35 U.S.C. §112

The Examiner has rejected Claims 1-20 under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. More specifically, the Examiner asserts that the amended limitation of "configured to weight said symbol in frequency domain" is not disclosed in the present specification and, furthermore, that the present specification does not disclose any operations are done in the frequency domain nor is there any mention of "frequency domain". (*See* Examiner's Action of April 17, page 2.) The Applicants respectfully disagree.

As stated in MPEP 2163 (I)(B), while the first paragraph of 35 U.S.C. §112 does not have an *in haec verba* requirement, newly added claim limitations must be supported in the specification through express, implicit, or inherent disclosure. The Applicants respectfully direct the Examiner to paragraphs 4 and 24 of the original specification which states that in the illustrated and alternative embodiments of the invention, a multiple input multiple output (MIMO) transmitter may form part of a broadband communication system employing orthogonal frequency division multiplexing (OFDM). One of ordinary skill in the art at the time of the invention would understand that an OFDM transmitter operates in the frequency domain. Thus, while the original

specification may not expressly use the phrase "frequency domain," the original specification supports operation in the frequency domain.

As such, the written description requirement from the first paragraph of 35 U.S.C. §112 is satisfied regarding previously amended independent Claims 1, 8, and 15 and Claims that depend thereon. Accordingly, the Applicants respectfully request the Examiner to withdraw the §112, first paragraph rejection of Claims 1-20 and allow issuance thereof.

II. Rejection of Claims 1-20 under 35 U.S.C. §102

The Examiner has rejected Claims 1-20 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent Application Publication No. 2003/0108117 to Ketchum, *et al.* (hereinafter "Ketchum"). The Applicants respectfully disagree. More specifically, the Applicants fail to find where Ketchum teaches a weighing a symbol vector in the frequency domain based on gains in channels of a MIMO transmitter to yield a weighted symbol vector as recited in independent Claims 1, 8, and 15.

As established in the response of January 28, 2008, Ketchum teaches the weighting of the symbol vector is accomplished with a spatio-temporal pulse-shaping matrix and thus the weighting of the symbol vector is achieved in the time-domain. Additional examples of Ketchum's teaching of waterpouring in the time-domain for a time-domain signal can be found in paragraphs: [0049] "...via time-domain implementation..."; [0051] "...with time-domain eigen-mode decomposition..."; and [0053] "...the time-domain signaling techniques of the invention can more easily integrate the channel/pilot structure of various CDMA standards, which are also based on time-domain signaling." As such, Ketchum does not teach each and every element of independent Claims 1, 8, and 15, and, therefore, Ketchum does not anticipate independent Claims 1, 8, and 15

and Claims that depend thereon. Accordingly, the Applicants respectfully request the Examiner to withdraw the §102(e) rejection of Claims 1-20 and allow issuance thereof.

III. Rejection of Claims 21 and 22 under 35 U.S.C. §102

The Examiner has rejected Claims 21 and 22 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 7,327,795 to Oprea (hereinafter "Oprea"). The Applicants respectfully disagree. More specifically, the Applicants fail to find where Oprea teaches an OFDM MIMO transmitter for transmitting a fixed number of bits at each transmission, comprising an encoding decision subsystem configured to select a constellation combination from a constellation set based on the fixed number of bits.

The Examiner cites Figure 1 and column 16, lines 33-55 of Oprea to teach Claim 22. This cited portion of Oprea teaches that a first data mapper 106 is provided spatial-subspace channel modulation information which indicates the modulation scheme that should be used on each spatial subspace channel. The modulation scheme can vary from QAM to Phase Shift Keying (PSK) with various modulation orders. The cited portion of Opera further teaches that higher rates of modulation are used for stronger spatial-subspace channels since the data point in the constellations corresponding to higher modulation rates are closer together and require a channel with better signal-to-noise ratios for minimizing data transmission errors. Thus, Opera teaches that selection of modulation schemes and orders and a selection of a constellation is based on the strength of a spatial-subspace channel. Opera does not teach that selection of modulation schemes and orders and selection of a constellation is based on a fixed number of bits transmitted at each transmission from an OFDM MIMO transmitter.

As such, the cited portion of Opera does not teach an OFDM MIMO transmitter for transmitting a fixed number of bits at each transmission, comprising an encoding decision subsystem configured to select a constellation combination from a constellation set based on the fixed number of bits. Therefore, the cited portion of Opera does not anticipate independent Claim 21 and Claims that depend thereon. Accordingly, the Applicants respectfully request that the Examiner withdraw the §102(e) rejection of Claims 21 and 22 and allow issuance thereof.

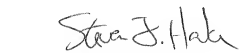
IV. Conclusion

In view of the foregoing remarks, the Applicants now see all of the Claims currently pending in this application to be in condition for allowance and therefore earnestly solicit a Notice of Allowance for Claims 1-22.

The Applicants request the Examiner to telephone the undersigned agent of record at (972) 480-8800 if such would further or expedite the prosecution of the present application. The Commissioner is hereby authorized to charge any fees, credits or overpayments to Deposit Account 20-0668.

Respectfully submitted,

HITT GAINES, PC



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